

# THE TEACHER.

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VOL. XXV.

NOVEMBER, 1872.

NO. 11.

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## *THE SCIENTIFIC SPIRIT.\**

THE scientific spirit which is now steadily and yet almost imperceptibly penetrating into all human thought and feeling is one of the powers of the world. Let us consider what it is doing. It is, in the first place, making its way into all education, not only by demanding a place for the study of science side by side with the study of literature, but by profoundly modifying the study of literature itself, introducing new methods of teaching, new standards of judging, new aims in learning, and new results of all. Everywhere there is heard a demand that the young shall be taught to know the world in which God has placed them, and the laws by which that world is governed. And this demand, which catches the public ear at every turn, is nevertheless not so striking a proof to the observant mind of the steadily-increasing power of the scientific spirit, as is given by the defence to which the older studies are everywhere driven in order to maintain their position. For it is becoming every day less and less possible to maintain for these older studies an attitude of calm superiority, needing only resolute self-assertion to put aside all attacks. The older studies are compelled to claim that they can train the growing faculties better, partly because of their own inherent aptitude, partly because of their superior methods. But when this claim is examined, it resolves itself, not entirely, but very nearly,

\* From a lecture just delivered by the Bishop of Exeter (formerly head-master of Rugby School), before the Devonshire Association for the Advancement of Science, Literature, and Art.

into a claim that the older studies are scientific studies, and their methods scientific methods. The basis of this interesting controversy is, in fact, being shifted to a scientific ground. Both sides are gradually coming to this common starting-point, that science must be at the bottom of all teaching. And the question is no longer whether science is to be admitted, but which science is to be ranked highest. The defenders of classical studies were once disposed to maintain that classics were better instruments of education than science. But now they argue that classics are as truly a science as physics or botany, with more valuable results, and with more scientific methods. The old distinction between scientific studies and other studies is gradually passing away, and by all careful thinkers has been already pronounced untenable. The study of man is as plainly a science as the study of matter; the study of language as one of the phenomena of man as plainly a science as the study of heat is one of the phenomena of matter. The student who devotes himself to the investigation of the uses of a Greek particle is as truly engaged in scientific study as he who examines the history and relations of a bit of chalk. A man who makes out the exact meaning of words uttered by a great teacher of ancient days is as really engaged in a scientific operation as the observer who examines the sun with his spectroscope. It is quite true that a false usage has for some time confined the word "science" to the study of material nature. But that usage is slowly but surely disappearing, and as it disappears the true character of the controversy on the proper subjects of instruction will become clearer. And as the defenders of the classical studies maintain the scientific nature of their subjects, so are they learning to maintain the scientific nature of their methods. Compare for a moment the learner who is set down to analyze a chemical compound and the learner who is set down to translate a difficult piece of Greek. Each has to resolve what is before him into its constituent elements. Each has to refer to the laws by which those elements are combined. Each is supplied in some way or other with the general principles of his study,—chemistry in the one case, grammar in the other. Each is supplied with some characteristics or test by which he is to know the elements in his hands,—the text-book of chemistry in

the one case, the lexicon in the other. And, what is most important of all, though quite as often forgotten by the teacher in the one case as by the teacher in the other, the one final proof of success in the task in both cases is that the learner shall have puzzled out the results for himself without being aided with any of those hints or indications which always seem nothing to any teacher who is not thoroughly master of his profession, but which in reality just makes the difference between really learning and pretending to have done so. The two processes are at bottom identical, and it is an abuse of terms to call the one method scientific and the other not. Or, again, listen to the answer which any great classical teacher will make to a demand that he shall put science, as the word is now generally used, on a level with classics in his school. He will often say that what he has seen of the teaching of science has not prepossessed him in its favor; that, as far as his experience goes, the teaching of science consists to a great degree of exhibiting very good experiments and giving very good explanations; but that inasmuch as the boys have nothing to do but to listen, they appear to understand when they really do not understand at all, and they rapidly forget because they have not thoroughly understood. Now, when this answer is examined, to what does it amount but to saying that the method often adopted in teaching the sciences of nature is not truly scientific? For if there is one characteristic of a scientific method more important than another it is this, that the learner shall handle with his own hands, shall see with his own eyes, shall judge with his own mind, shall infer with his own intellect. And certainly, as things now are, this characteristic is more plainly to be seen in the teaching of classics than in the teaching of anything else. Even geometry is not always taught in this country by so scientific a method. Nothing is more common than to find teachers who believe that a boy has learnt geometry who can write out a proposition of Euclid correctly, although they have no idea how few of their pupils would be able to work out an exceedingly simple geometrical problem without some fatal blunder of principle. But no classical teacher would dream of pronouncing a pupil acquainted with syntax who had not, in writing many exercises, proved by his unfailing accuracy in the application of gram-

matical rules that he thoroughly knew the principles of grammar. As this controversy goes on, I have no doubt that the old studies will hold their ground,—not certainly as hitherto, to the exclusion of all others, but certainly in a position of acknowledged pre-eminence. But they will do so only by submitting more and more to the scientific spirit, by confessing their scientific character, by acknowledging the supremacy of the laws of science. And in so doing they will be profoundly influenced, and their methods, though good already, will be much changed for the better, and though scientific already, will become more scientific yet. For the goodness of the methods used in teaching these subjects is accidental, the fruit of a healthy instinct gradually feeling its way through many generations; unconsciously, not consciously scientific; resting on excellent traditions, not on known principles. The classical teacher teaches scientifically, as M. Jourdain wrote prose, without knowing that he is doing so. Nor do I think that it can be denied that in itself the study of material nature is from its simplicity better fitted to illustrate true scientific methods than the far more complex study of any of the human phenomena. All studies, and among them more especially classical studies, will improve their methods under the influence of that pervading scientific spirit which is now surely conquering them all. For the distinction which I drew just now between conscious and unconscious scientific methods is one of prime importance. At all times, and in all stages of culture or barbarism, men will use scientific methods and processes more or less. They would cease to be men if they did not. For these methods and processes are inherent in human reason. These methods and processes may be improved in successive generations by mere use, and brought to some degree of excellence. But as they are unconsciously and not consciously scientific, their improvement is irregular, uncertain, sometimes checked for a time altogether, sometimes replaced by actual deterioration. And throughout all their progress they are inevitably mixed up with much that is altogether unscientific. It is when these methods have become consciously scientific that improvement is sure and definite, and never retrograde. Then begins the steady and certain elimination of the unscientific traditions. Then, and not till then, can it be said that men are

possessed with the scientific spirit. Then do they begin to look at knowledge as a whole, and to recognize the relation of its parts to one another. And it is in this sense that the scientific spirit is entering into education, and will assuredly succeed at last in remodelling it. Now it will have been noticed that, in speaking of this controversy on the subjects and methods of education, I have left out of sight a very important consideration, which nevertheless constantly enters, and is held by the mass of men to be better entitled to decide the dispute than any other, and this consideration is, not the scientific character, but the practical utility of different studies. But I omitted this, not because it is not exceedingly important in itself, and deserving of careful thought and discussion, but because, in the only aspect of the controversy of which we can properly take cognizance here, it cannot be admitted at all. For scientific purposes utility must be distinctly put aside. The utility of a science for practical uses in life is a crown of glory to be worn if won, but never to be made the chief aim. Nothing is so fatal to the true scientific spirit as to make practical results the measure of value and the direct aim of labor. To aim directly at practical results is always to mar the very results at which we aim. The largest benefits to mankind invariably come from science pursued for its own sake, without any reference whatever to those benefits. Such benefits bear to science the same relation that the highest and noblest pleasure ever bears to virtue,—that is, to use the words of Aristotle, it is *epigignomenon ti telos*. To seek virtue for its own sake, brings with it the truest and worthiest pleasure. To seek virtue for the sake of the pleasure that it can bring, is to destroy the essence of the virtue, and to lose all chance of the pleasure. So also to study science for the sake of science will bring to mankind countless benefits; to study science for the sake of those benefits is to injure the science, and consequently to lessen the benefits. There may be very good reasons why education should be directed to secure practical and material results; but those reasons will certainly not find their force in the prevalence of the scientific spirit. I pass on from education to life, and there, too, the quiet growth of the same scientific spirit is everywhere visible. Nothing is more marked than the increasing value which

men give to knowledge for its own sake. However utilitarian the age may be,— and in more than one aspect it is intensely utilitarian,— the keenest interest is everywhere shown in branches of knowledge which not only have no immediate utility, but, moreover, give no promise of any. How keenly do men listen to the remarkable discoveries made of late years by the use of the spectroscope! It is difficult to imagine how any material benefit to mankind can ever be derived from our knowing the constituent elements of the sun, or the proper motion of the fixed stars. Yet the progress of these investigations has been watched with the keenest eagerness by thousands who have neither the opportunity nor the capacity for joining in the investigations themselves. Nor can it affect our material welfare to know anything of the meteors which gave us the splendid spectacle of November, 1866. But the identification of the orbits of such meteoric streams with the paths of comets is a discovery of interest for thousands who cannot be called students of astronomy. More and more does it seem to be felt that there is something elevating and ennobling in the mere possession of the large conceptions which science supplies. The opening of the imagination, the lifting of the thoughts which inevitably comes from fuller knowledge, is felt to be a gain to humanity. And religious men put the same thing into still fitter language when they urge that it is worth while to study God's works, of whatever kind, simply for the sake of knowing them, and that whatever else may be said about such knowledge, it is, as far as it goes, a good of the highest value. It will seem but a repetition of the merest common-place to say that science is gradually setting men free from many superstitions. But here, too, it is well worth while to note that it is not the science itself which is producing this result, but the sturdy growth of the scientific spirit always creates an atmosphere in which superstition finds it hard to live. The facts on which the superstition rests remain what they were. And the arguments founded on those facts remain also. But the weight of such facts and arguments is entirely gone. Where the scientific spirit has not yet entered, nothing is more remarkable than the readiness with which the mind refers everything that cannot be accounted for to a supernatural cause. "How

else can you account for it?" is felt to be a powerful argument. When once the scientific spirit has prevailed, this argument is no argument at all; and the reply is ready, "The fact that I cannot account for it does not tend in the slightest degree to prove that it is supernatural." So again where the scientific spirit has not yet entered, old traditions on every subject whatever have a high authority. Cures for illness, omens and warnings, proverbs, general facts of natural history, are stated and are accepted simply because they have been handed down. The scientific spirit challenges them all, and admits traditions only in their proper place as evidences of past beliefs, and possibly results of past observations. The consequence is, that superstitions of all kinds wither and die far beyond the limits to which science in any proper sense can extend, because the scientific spirit dries up their roots. For the scientific spirit teaches men to hold their judgment in suspense where there is no evidence on which to found a judgment. It is hard to the mind to draw no conclusion and have no opinion either one way or the other. But the scientific spirit stills the demand for an immediate judgment now by the prospect of a trustworthy judgment hereafter, and teaches that it is worth while to wait, and to wait long, if waiting will give a result that can be relied on. The influence of the same scientific spirit can be traced in the increasing importance given to accuracy in statements of fact. Science very early learns the enormous difference in value between loose and accurate statements, and between statements of fact and theories or conjectures. And in all life this importance is more and more felt. Histories of all times are being rewritten, in the endeavor to satisfy the demand for a more thorough sifting of the facts narrated. Statistics are valued high, and the collection of them undertaken by authority of state; and, in spite of the misuse that may be made of them, they are repeatedly taken as the only sure basis of action and legislation. Books on serious subjects rapidly lose estimation, even when they show great ability, if once their statements on matters of fact can be shown to be untrustworthy. This demand for accuracy is steadily increasing because of the increasing sense of the value of such knowledge. Yet again it is worth while to notice the steady penetration of

the scientific spirit into legislation. All laws which concern finance are now examined and discussed on scientific principles. At all times, of course, men endeavored when making laws to keep a purpose before them ; and they very often in past times hit upon sound principles of finance by a happy accident. But the treatment of such questions as a whole with a distinctly scientific purpose belongs to the present day. Political economy, now so eagerly studied, was all but unknown a century ago. Now it gains a greater hold every day, and its authority is unquestioned. The resistance to its conclusions is invariably put into the form of an attempt to draw different conclusions from the same premises, or to introduce new premises ; but not to deny the existence of the science, or its right to govern legislation. Side by side with more scientific legislation on finance, we can see an attempt made at more scientific treatment of crime and criminals. The bare determination to put down whatever could be pronounced a crime by a kind of brute force is replaced by an endeavor to consider what means for repressing crime are at command ; what are most likely to succeed, not only for a time, but permanently ; what conditions should be observed in the use of such means. On all sides we hear discussions of punishment considered as a means of deterring the criminal by fear, as a means of maintaining the moral standard of the people, as a means of reformation. We may be far from a thoroughly satisfactory science of punishment ; but the scientific spirit has plainly entered into all our dealings with crime, and shows itself in every attempt that we make to improve our system. I cannot but look on it as a gain to humanity, that in all these various ways, and in others that I have not mentioned, the steady progress of the scientific spirit should be so marked and unquestionable. It seems to me that there are many evils with which this spirit, and this alone, can grapple. Ignorance inflicts on mankind an amount of needless pain, which seems to exceed by far all that is due to any other cause. Ignorance is the source of a very large proportion of disease. Ignorance is the soil in which groundless suspicion of others, uncharitableness, cowardice, often cruelty and injustice, flourish most abundantly. Ignorance puts many temptations in the path of those who would be entirely

safe if they had better knowledge. Ignorance is perpetually associated with degrading conceptions of God and of the spiritual world. Whatever dangers may attend the prevalence of science, yet assuredly men gain in dignity by their profounder acquaintance with the works of God, and with the laws which He has stamped on those works. No man who has gained even an imperfect insight into such knowledge would ever desire to return to his former ignorance. We may point out the evils that sometimes attend the progress of knowledge; but each man, when judging for himself, unhesitatingly accepts the evils if he can but obtain the knowledge. But, nevertheless, as I am reviewing the tokens of progress, it is but natural that I should indicate what appears to me to be the danger before us, and, if possible, the remedy. The great danger that besets the scientific spirit is one which equally besets the development of every human tendency, and yet it is one by which men of science are peculiarly apt to fancy themselves unassailable. The danger that attends science is narrowness of mind. There are two forms of this narrowness. For, first, it is a temptation to every student of science to overvalue science, perhaps even to question the value of everything else. There is such a power in the certainty which science gives, such a sense of solidity in the ground on which she plants our feet, that we are inclined, in her presence and following her guidance, to think that she must claim absolute supremacy. In education, for instance, we are tempted to think not only that all education should be scientific, but that it should sacrifice all other aims to science alone. To cultivate the imagination, to store the memory with great examples, to purify the taste, to kindle the higher affections, perhaps even to implant high principles of action and awake the conscience,—all these are not to rank so high as the endeavor to indoctrinate the intellect with scientific discoveries and train it to scientific procedures. So, too, in the concerns of life, it is not unnatural to the student of science to think that he has a special right to rule his fellows, and that it is only their blindness which prevents that right from being recognized. He does not see that until he has removed that blindness, his knowledge, however perfect, will not justify his claim. This tendency in various forms—sometimes

slight, sometimes serious — can often be recognized, and brings on science the reproach of arrogance, and makes the progress of science less welcome than it should be. The second tendency of the same kind is even more frequently to be seen than the first. It is the tendency to fancy, as I have already indicated, that science, which is now in its infancy, has already conquered a vast proportion of the field that is open to it, and that that which we now call by the name covers a good deal of the ground. It was inevitable that science should begin its sure march with the simplest phenomena ; for to begin with the complex baffled the human intellect so much as to make it impossible to recognize the true principles of advance. The Greek attempts, which began with the exceedingly complex phenomena of humanity, although the success which they achieved was marvellous, and though some of their results will assuredly stand through all time, yet could never give men a conscious knowledge of the true scientific method, and much of their extraordinary intellect was wasted in consequence. The sciences of material nature are beyond all comparison more simple, and are gradually revealing to us what the scientific procedure really is. But, in the mean while, these sciences mislead us into the belief that because they alone are yet cast in a scientific form, they alone are true sciences, and they alone ever will be. The student of science is thus tempted to think, not only that there is nothing but science in the world, but that there is no sciences except those which have already taken a scientific form. On the other hand, the instinct of the general public teaches them that there is a vast range of possible knowledge of far more value to men than a knowledge of material nature, and that is a knowledge of human nature. This cannot yet be treated as a science ; but its importance is so exceedingly great that, even in its present rough form, it cannot be set aside or undervalued, and every attempt so to treat it, only discredits the science whose votaries make the attempt. This kind of narrowness is sometimes to be seen within the circle of the material sciences themselves. It is not at all uncommon for students of science to overvalue their own particular branch of it, and to undervalue others. It is not at all uncommon for them to fancy that the scientific processes which

they have employed, and rightly employed, in their own investigations, are the only, or the most important, processes for all investigations. The observer, for instance, is tempted to think that he needs no special training to be an experimentalist ; to fancy that the same precautions which are enough in the one case will be enough in the other. Was there not a signal example of this mistake given to us last year, when men of great name backed the impostures of Mr. Home ? So, too, the mathematician sometimes shows himself singularly unable to handle the procedure required in chemistry or physics, and yet not to be aware of his own inability. These are the dangers that attend the study of science ; and in what is the remedy to be found ? Assuredly in the progress of the scientific spirit. Science will cure its own evils. The scientific spirit is inconsistent with all narrowness of any kind. In its progress, it will at last teach us to know the limits of science itself, the conditions and character of each kind of scientific process, the character and value of the other gifts with which God has enriched humanity, the existence and importance of branches of a science which we have as yet hardly begun to study scientifically, because even the materials are wanting. In this way will science assuredly, at last, work out its own reconciliation with all else that man has reason to value. It will learn to know what is superior to it, as well as what is inferior ; it will profoundly modify much that it now seems to ignore ; it will gradually give a scientific form to what at present appears to be hardly capable of such a form at all. In the course of this progress, men may possibly have to part with cherished ideas, which now seem of vital importance, and this may cost much pain, perhaps more than pain. But assuredly it will, so far from touching the inner substance of the highest truth, end with giving to that truth immeasurably greater strength. To the Christian it can never be otherwise than a fact of the deepest significance, that for centuries past science and Christianity have been given by God's providence, to the same nations. Look over the world, and you will see that as in civilization generally, so pre-eminently in science, the Christian nations take the lead. The missionary, wherever he goes, nowhere finds the people whom he visits able to cope in science with the people from whom he

comes. There must be some deep connection between science and Christianity, between truth given by reason and truth given by revelation, between the knowledge of God's works and the knowledge of His word, to produce this undeniable coincidence. The scientific spirit and the Christian spirit must have something in common. There must be some common purpose which they are to join in working out. They must be intended in some way to act and react on each other. They must in some way be gainers by each other's presence. And the Christian knows that the reason is, that both are the gifts of the same Giver. It is, then, from a conviction no less of its immediate services than of its ultimately far greater value to mankind, that I welcome the progress of the scientific spirit. That progress will of necessity be very slow ; much slower than we should desire to make it if we had the government of the world. But the slowness of the progress appears to be the necessary condition of the stability of the conquest. Meanwhile every one who contributes to make men habitually observe more accurately, combine more skillfully, and reason more strictly, confers a benefit on untold generations of his fellow-creatures.

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#### WANTED.

GOD give us men ! A time like this demands  
 Strong minds, great hearts, true faith, and ready hands ;  
 Men whom the lust of office does not kill ;  
 Men whom the spoils of office cannot buy ;  
 Men who possess opinions and a will ;  
 Men who have honor, — men who will not lie ;  
 Men who can stand before a demagogue,  
 And damn his treacherous flatteries without winking !  
 Tall men, sun-crowned, who live above the fog  
 In public duty, and in private thinking :  
 For while the rabble, with their thumb-worn creeds,  
 Their large professions and their little deeds, —  
 Mingle in selfish strife, lo ! Freedom weeps,  
 Wrong rules the land, and waiting Justice sleeps !

J. G. HOLLAND, in "Marble Prophecy."

**TINT, TINT, TINT.\***

IT is now twelve years ago that I was for the first time brought face to face with a class, some fifty in number, of little Latin novices. They all regarded me with sensations of wonderment and awe ; they had but a faint idea, luckily, of the terror with which I regarded them. I had, certainly, the recollections of my own long elementary training to guide me in my proceedings ; and I had the traditions of the school, to which I had been recently appointed as master, to direct my uncertain steps. But the recollections of my own training were all tinged with melancholy ; and with the traditions of my new sphere of duty I was but imperfectly acquainted.

In the middle of my class-room stood a machine, somewhat resembling a patent engine for the simultaneous polishing of many knives ; and I was desired to take a firm grasp of its wooden handle, and to turn it with vigor and rapidity. And an implement of simple leather was put into my hands, by the dexterous application of which I was to quicken the apprehensions of such children as might be uninfluenced by the monotonous music of my gerund-stone.

And for many a day, obedient to tradition and to my orders, I turned rapidly the wooden handle, and flourished vigorously the simple implement to the very best of my ability. But, strange to say, although I was then youthful and strong, and eaten up with a superfluous zeal for my calling, I could never turn the machine without its creaking painfully ; and whenever I applied my leathern implement to a child's palm, I was immediately conscious of a thrill, as of electricity, that ran from my finger-tips to the very centre of my nervous system ; and sometimes, after the performance of such an ordinary act of duty, I would find myself standing before my pupils with a heightened color upon my face, and a tingling in my ears ; and to a looker-on I should have appeared as one ashamed of having done some questionable deed.

Finding all my efforts unavailing to work smoothly and noise-

\* From "Day Dreams of a Schoolmaster," by D'Arcy Thompson.

lessly my mechanical engine of instruction, I at length relinquished it altogether ; and it has been now standing for years in a side-room adjoining my place of business, and is covered over with cobwebs, and rusted at the juncture of the stone and handle.

To supply the place of its simple mechanism, I brought to bear upon my pupils all the moral and intellectual means at my disposal. I spared myself neither in the matter of time nor trouble in my endeavors to educe the dormant faculties of my charges ; and enjoying as I did for many years a bodily health impervious to fatigue, and having a keen sympathy with boyhood, I succeeded more and more, until I almost ceased at length to regret the disappearance of my gerund-stone.

But the more I gave satisfaction to myself, the less I gave satisfaction to the majority of my so-called patrons,— the guardians of my young pupils. From time to time, when I was indulging in a dream of appreciated toils, I heard of complaints being circulated by such as were favorers of mechanism in instruction. Pupils, in whose progress I had begun to take a keen interest, were from time to time removed without a word of explanation, or the civility of a farewell. “They were not *grounded*,” said these waggish but unmannerly guardians ; meaning all the while, “They were not *ground*.”

I had almost begun to despair of my system, and to think that I had mistaken my calling ; and was casting about my eyes for some honest trade to which I might apprentice myself, when one afternoon my class was honored with a lengthened visit from a gentleman of acknowledged rank and worth and judgment. After the lesson was over, I complained to this distinguished visitor that my system of conveying instruction, as being natural and philosophic, was popularly considered a more difficult one for a pupil than the ancient turning of a piece of mechanism. My visitor, who had a son under my charge, stated his firm conviction that my system was not only likely to produce better results, but was also in its operation far more easy and interesting for a young pupil to follow. From that moment I felt reassured, and determined never again to regret the absence of my gerund-stone.

And now to treat of the loss of my other auxiliary implement.

The application of this latter, I can honestly say, was never made excepting with the view of stimulating over-dormant energies, and of repressing tendencies to chronic negligence or misconduct. I considered myself as an abstraction; as the embodied representative of the class; and used the implement only to protect the interest of the latter, which suffered, to my mind, whenever one of its members, by carelessness or lack of study, turned upon himself that stream of time and energy that should have run uninterruptedly to the irrigation of the body corporate. In fact, I made myself the dividend in a long division sum, whose divisor was *duty*; the quotient, I found, was *teacher + superintendent*, and the remainder, *personal identity*, which was very small in comparison with the divisor, and might practically be ignored. So, when a little fellow walked after me for a few days at the striking of the bell, with his hands beneath imaginary coat-tails in imitation of my gait, I considered him as only joking with me in my capacity of *remainder*; and I merely asked him to desist, as otherwise I should make fun of him in revenge; and he desisted. And when a boy wrote my name upon the desk, I was contented with showing him how he had misspelt it; and he rubbed it out at my request. And when a boy, years ago, put his tongue into his cheek after an admonition, I showed his comrades what little control he had over that organ; knowing, as I did, that he intended to protrude it on the side that would have been invisible to me. And I may state that such trifling incidents were of so rare occurrence, that I could enumerate them all upon the fingers of one hand.

But still, although I was conscious that I used the implement with good intent, and aware that it was similarly used by men who were my superiors in age, and certainly not my inferiors in kindness and sympathy with boyhood, I was haunted with an idea that the use of it was founded on an error in our system of instruction; and I was long pondering where the error could lie; and I found the subject far more difficult than I had at first supposed, and I confess it still to be a problem difficult of solution.

I was in this frame of mind one day, when, according to an unalterable rule, there came under the influence of the electric implement a little quiet, well-behaved, and intelligent foreigner

The application had scarce been made when a young comrade — bless the lad! — gave vent to an unmistakable hiss! Order, of course, was immediately and energetically re-established. But in my walk that afternoon by the sea, and in many a lonely walk afterwards, I thought about that little foreigner and his courageous comrade. And I thought how that little foreigner, returning to his own land, the ancient home of courtesy and gentle manners, would tell his friends of our rude northern ways. And I trembled at the idea of my usage of the electric leather being narrated in the hearing of one of those terrible colonels, whom their emperor holds with difficulty on the leash. For I thought if ever our great metropolis were in their hands, how ill it would fare with all therein that turned the gerund-stone, and with those therein that bare my hapless surname. And the names of these is legion. And knowing that the comrade was no vulgar and low-natured boy, I felt sure in my heart that there was at least something right in the impulse that had pushed him into danger and disobedience. But still I was afraid of allowing sentimentalism or impulsiveness on my part to take the place of duty, however stern and unpalatable.

I was standing not alone one morning in the lobby of my own home, just before leaving for the day's work. A great-coat of mine was hanging from the wall. My Companion, in a playful mood, put a small, white hand into one of its pockets, and drew a something out; then thrust it back hurriedly, as though it had been a something venomous. And over a very gentle face passed a look of surprise not unmixed with reproof; but the reproof gave way almost momently to the wonted smile. But I long remembered the mild reproof upon that gentle face; for it was an expression very seldom seen there; and it came afterwards to be numbered with other sad and sweet memories.

Meanwhile, at the end of the last bench upon my class, sat a boy who was very backward in his learning. He was continually absent upon what seemed to me frivolous pretences. These absences entailed upon me much additional trouble. I had occasionally to keep him and a little remnant in the room when the others had gone out to play; to make up to him and them for lost time. And on one occasion my look was very cross, and

my speech very short ; for it seemed to me provoking that children should be so backward in their Latin. And when the work was over, and we two were left alone, he followed me to my desk and said : " You have no idea, sir, how weak I am." And I said, " Why, my boy, you look stout enough." But he answered : " I am really very weak, sir ; far weaker than I look !" And there was a pleading earnestness in his words that touched me to the heart ; and afterwards there was an unseen chord of sympathy that bound the master to the pupil, who was still very dull at Latin.

And still he would be absent ; at times, for a day or two together. But it excited no surprise. For the boy seemed to sit almost a stranger among his fellows ; and in play-hours seemed to take no interest in boyish games. And by and by he had been absent for some weeks together. But I was afraid to ask concerning him ; thinking he might have been removed, as many boys had been, without a letter of explanation, or his shaking me by the hand. And one morning I received a letter with a broad, black edge, telling me that he had died the day previously of a virulent, contagious fever.

So, when school was over, I made my way to his whilom lodgings, and stood at the door, pondering. For the fever, of which the child had died, had been to me a Death-in-life, and had passed like the Angel of old over my dwelling, but, unlike that angel, had spared my first-born, and only-born. And because the latter sat each evening on my knee I was afraid of the fever, and intended only to leave my card, as a mark of respectful sympathy. But the good woman of the house said : " Nay, nay, sir, but ye 'll see the laddie " ; and I felt drawn by an influence of fatherhood more constraining than a father's fears, and followed the good woman into the small and dim chamber where my pupil was lying. And, as I passed the threshold, my masterhood slipped off me like a loose robe ; and I stood, very humble and pupil-like, in that awful Presence, that teacheth a wisdom to babes and sucklings, to which our treasured lore is but a jingling of vain words. And, when left alone, I drew near the cheerless and dismantled bed, on which my pupil lay asleep in his early coffin. And he looked very calm and happy, as though there had been to him no pain in passing from a world where he had had few companions

and very little pleasure. And I knew that his boyhood had been as dreary as it had been short; and I thought that the good woman of his lodging had perhaps been his only sympathizing friend at hand. And I communed with myself whether aught I had done could have made his dulness more dull. And I felt thankful for the chord of sympathy that had united us, unseen, for a little while. But, in a strange and painful way, I stood rebuked before the calm and solemn and unrebuking face of the child on whom I had frowned for his being backward in his Latin.

That evening, as usual, my own child was seated on my knee, making sunrise out of sunset for myself and his Mother's mother. And the table was alive with moo-cows, and bow-wows, and silly sheep. And we sang snatches of impossible songs; or hid ourselves behind chairs and curtains in a barefaced and undeceitful manner. And the Penates at my hearth, that were chipped and broken, blinked merrily by the firelight; and the child was taken to his tiny bed; and the chipped Penates thereupon slowly faded out of view, and disappeared among the cinders.

And I sat musing, alone. And yet not all alone. For in the chair, where recently had been sitting the mother of my child's mother, there sat a gray, transparent Shape. And the Shape and I were familiar friends. He had sat with me many a time from midnight until when the morning had come peeping through the green lattice. And he had peopled all the chambers of my house with sad thoughts and black-stoled memories. So, never heeding my familiar friend, I sat, staring in the fire, and thinking.

And I thought, sadly and almost vindictively, of the dreary years of my own early boyhood, with their rope of sand, and the mill-wheel that had ground no corn. And I remembered how at times there would come to me in my exile the sound of my brother's laugh, and the sweeter music of my Mother's voice. But I remembered thankfully, that through years of monotonous work and rough usage I had enjoyed sound health, and had had companions, with whom I had walked and talked and romped and fought, cheerily.

And I wondered whether I should be spared to see my own child grow to be a merry and frank-hearted little fellow; to hear

the music of his ringing laugh ; to see his face flushed with rude but healthful sport ; to hear of him as beloved for many boyish virtues, and reproved, not unlovingly, for his share of boyish faults. And I longed to be climbing with him the hill of Difficulty, and lightening the ascent for him with varied converse ; resting now and then to look down upon the valley, or to let him gather blue-bells that grew on the hill-side.

And then I thought of a boy who had sat of late on the last bench in my class-room, with a timid and scared look beside his bluff and bold companions ; who had stood in the noisy play-ground, lonely as in a wilderness ; whom I had seen that afternoon in his early coffin, with the seal upon his forehead of Ever-lasting Peace,— the peace that passeth all understanding.

So I determined — from the recollections of my own dreary boyhood, for the mild reproof that once had clouded momently very gentle eyes, for the love I bear my own little one, and for the calm and unrebuking face I had seen that afternoon — that I would do as little as possible in the exercise of my stern duties to make of life a weariness to young children, and especially to such as should be backward in their Latin.

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### ALONE.

HERE I sit, as I 've sat, for many a night,  
 With the winds a-sighing,  
 And the scuds a-flying  
 Through the steel of a November's midnight light, —  
 Alone.

Here I sit, with a picture on my burning brain,  
 Of a form I 've caressed,  
 And lips I have pressed,  
 And a Love that dies not, in a heart of pain, —  
 Alone.

Here I sit, as I shall sit, till my hair is gray,  
 Agony flashes,  
 In this heart of ashes,  
 Wifeless, childless, till my funeral day, —  
 Alone.

GEO. E. BROWNE.

***ART AS AN OCCUPATION FOR WOMEN.\****

IN speaking about the suitability of art study as a training for women, and its practical value as fitting them for the serious duties of life, by which in any event they make themselves independent members of society, I am conscious that I touch on a subject upon which there is much difference of opinion at least, and latterly much controversy. In view of this, and only recognizing the difference of muscular strength in the sexes, existing for obvious reasons, and which according to every natural law must be compensated for by some special endowment not possessed by the muscularly strong (or Nature has been less just to her last creation than to all others), I judge from my own experience that the whole subject is one of great interest, and that the compensation referred to takes the form physically of a more delicate organization, and mentally of a greater sensitiveness to outward influences. Theories seem to me to be fairly deducible from practice, by those who may have no claim to be philosophers, or who do not possess the original faculty of inductive reasoning; always supposing that those who practise have sufficiently long and extensive practice, and seek rather to discover a principle for their own guidance than to establish a theory pre-conceived or borrowed from others. My own fear has been, and now is, that hitherto women have been treated as pets and playthings, to be indulged and delighted in, but not to be held responsible for anything; have been educated with the view that all should become merely the ornaments of society, and not its essentials, and the important half of its structure; that, finally, men have come to regard women with a patronizing feeling, in which there is an infinite amount of good-nature in some cases, but no justice in any case. And the terrible thing is, that, when the good-nature ceases, or the indulgence necessary to a plaything comes to an end, all the penalties fall on one side only: the whole of the sauce is used up for the goose, whilst the gander stalks away

\* From "Art Education, Scholastic and Industrial," by Walter Smith, State Director of Art Education; and just published by James R. Osgood & Co., Boston.

to new fields that are ever verdant and fresh, and indulges his gandorial magnificence.

Christianity and May meetings ought to have had long enough opportunities in nearly nineteen hundred years to test the fairness and justice of this view of human nature; but they seem to me to have failed to discover that whatever difference our beneficent Creator meant to exist in his design of human beings he usually places there with his own Almighty hand, and requires no further journeyman's work on man's part to emphasize or stamp this difference. Yet, in spite of this, we educate women superficially, and then smugly say they have no minds; we withhold all reasoning processes from them, and then say they cannot argue, but jump at conclusions; we train and grind up our boys in athletic sports, in Euclid and conic sections and the differential calculus, and our girls in Berlin-wool work, in waltz-playing, and the Paris fashions, and then proclaim that men can reason, women only perceive; men can create, women only appreciate; and, as Milton the Puritan poet expresses it, —

"For contemplation he, and valor formed; \*  
For softness she, and sweet attractive grace," —

as though contemplation were not equally characteristic of both sexes, the combination of leisure, a stored mind, and subject to contemplate; valor, the result of self-confidence in training, and difficulties already overcome, and faith in surmounting future difficulties; softness and sweet attractive grace, the natural appreciation of each sex by the other, as much belonging to men as to women, common to the two sexes, which are alternately the attracted and the attractive.

My own belief is, that we have no grounds for, and no right in, making any difference whatsoever in human beings on account of sex, either in their education or occupation, more than Nature has done; and that half of the troubles we find in the world arise from, and are a just judgment upon, our presumption in making any distinction between them, in fostering the self-conceit of the one, and sacrificing the independence of the other. Let the same education — from the first to the last, physical and mental — be

\* Not trained.

furnished for both sexes ; let it be accepted, that, as they require the same physical sustenance, so they will need the same intellectual food ; that the two who will in time become one flesh shall be in unison and harmony with each other, in attainments and desires, in their minds as well as their bodies ; and then we shall have the perfect harmony in difference which we see in all God's works, leaving it humbly to Him that all His plans shall develop themselves with as much certainty as that He creates each after its kind, without any impertinent help from us. The compensation which it appears to me Nature makes to women for the comparative withholding of muscular strength, is endowing them with greater powers of endurance in the first place, and a gift of natural aptitude and quickness, which, when it exists in men, we call mother-wit. Thus we see that whilst men become irritated and impatient of the repetition of little troubles, and would put a violent end to them, women, like charity, are long-suffering and kind over vexations, which in connection with their children and other cares often last daily for years. The quickness and aptitude they have may be the support which Nature gives them through their instincts, as a balance to men's muscular superiority ; and this seems to me to indicate that the sensitive touch and quick perception and delicate hand point out the practice of art as peculiarly adapted for a woman's occupation, being in itself the most refined and delicate of all manual labor, as it is also the most perfect expression of the impressions we receive, through our eyes, of physical phenomena.

It may be that, should we recognize this view, the fair division of labor, which somehow or other must be made, will be facilitated, and both sexes profit by it. If we remove all masculine protective tariffs, we may find great powers where we have fancied that weakness was inevitable. In literature, we have some of the most powerful works of the imagination written by women ; and they fetch the same price in the book market as the novels which men have written. In the picture exhibition, the buyer discusses a work of art in relation to its price, not with reference to the sex of the painter ; and those who are familiar with the London exhibitions know that as large a proportion of the works displayed in the exhibition of the Society of Female Artists are

sold as in any other exhibition composed principally of the works of men. That, however, is the case with books and pictures only, where women sell their labor at their own time, and choose the purchasers, being proprietors of their own skill. In every other avocation that I know, the same work, performed in the same manner and with equal skill, is paid for at an entirely different rate to the two sexes. This is especially the case in education, whose influence on the happiness and safety of the human race cannot be overrated, that of those who are employed to train up our children in the paths of rectitude and strict morality, nine tenths of them are paid for their labor at about half the price they would receive if they were men,—an unfortunate example to them of how they should teach rectitude and instil moral principles.

If a woman and a man were by their industry to raise two barrels of potatoes, and each took a barrel to the market, the market price of a barrel of potatoes would be given to each for their goods. If a woman and a man by their industry and training grow the ability to teach, and take their goods to sell in the educational market, both being of the same quality, tried by every test, the man will be paid by the purchaser nearly fifty per cent more than the woman; and the latter is of necessity obliged to take the unrighteous offer. That is to say, when we are buying food for our bodies, or to fatten our hogs, we do fairly to all who have to sell; when we purchase intellectual sustenance, to educate and develop our children, we pay those who have education to sell, if they are women, at fifty per cent less price than we should pay them if we were buying potatoes of them for our swine.

The minds and souls of our children seem to me to be of as much importance as their bodies, and even as the bodies of any other animals; but here, in comparison, by an act of injustice, we undervalue them about fifty per cent. If women supply us with only half as good an article as men, we do an injustice to our children by employing them; if the article supplied by women is as good as that supplied by men, we rob them of every dollar we should pay men for it, but don't pay to women.

So that, in the educational labor market generally, we act

inconsistently, and inflict penalties upon those from whom we require the most exalted service. This cannot be for the public good, but proceeds from the limitation of occupations suitable to women, resulting from their utterly unpractical education, which throws almost all women of the middle class who are without means into the educational market. By this, individual labor is reduced in value, the market being glutted. The purchaser, therefore, goes in and buys up what he wants at half price, the needy seller sacrificing it, on the principle that half a loaf is better than no bread. This is the explanation of a condition of things, which is, from the public point of view, utterly suicidal economically, and the root of many evils morally. We have drifted helplessly, but, I trust, not yet hopelessly, into social circumstances, by which the intellectual powers of half of the human kind are left dormant, and remain stunted and undeveloped; so much so, that but a very limited number of occupations are possible to women, and of these, from our worship of a fetish called Mrs. Grundy, many are deemed unsuitable. Yet Nature goes on laughing at the little golden calf that we have set up, and bringing into the world more women than men, whose minds and actions we deliberately cramp more than John Chinaman does the foot of his female minister, who is so much his mere chattel as to be drowned by him, or sold to his neighbor, to suit his own convenience, without interference by the law.

I do not regard this as so much a woman's question as a man's question, and not as a sentimental question at all, and decline to be made, by my own consent, a practical sufferer economically by the sentiment which others import into it. I want to feel the sensation of common honesty,— that I pay for a dollar's worth of work with a dollar, and not with fifty cents, whether I buy it of a woman or a man; and I want to see one half of the human beings that are born do half the work which is to be done, and receive half its recompense. For every portion of that half of the work which men withhold from women, men have to make up by additions to their own half; and for every dollar withheld from them for work done men have to pay them in some way, directly or indirectly, as a question of sentiment or charity; which destroys self-respect and independence in women, and

develops in them slavishness and timidity, distrust in themselves, and absence of self-reliance and self-helpfulness.

I am aware that for this deplorable condition of things no one is directly to blame, and that men are sometimes very hardly judged by women as being wholly responsible for it. We have drifted into it, having set too much store by that Eastern estimate of women we originally received from the Jews, and might as well have adhered to burnt-offerings, peace-offerings, and sacrifices, as to still keep up the senseless distinctions of sex which came to us from the land of harems and fatalism. It is time to wake up from our delusion on this matter,— time for men to reject with the scorn and contempt it deserves the masculine and feminine chirruping of those who accuse women-helpers of a desire to unsex them, as though that were possible. Here we see women of ability and power running off into all kinds of lamentable delusions, and inventing pestilent doctrines concerning their relationship to men, all for the want of sound practical education, good, healthy work, and fair treatment; and yet we fold our hands, and stand idly by, horrified at the phantom our neglect has called up, instead of remedying it by the only possible specific,— work and wages, and plenty of both. We ought to clear away the fanatical cobwebs in women's brains — engendered by superficial education, by their sense of unjust treatment, and partly by enforced idleness — with a vigorous blast of wholesome labor in any capacity or occupation they choose themselves, or can do the best at; and let us once for all try and learn the truth, that sin and labor are of no sex, and that any professional or manual occupation a decent woman could not worthily be employed in, a decent man has no right to engage upon; whilst every employment that is necessary and honorable is as much so to one sex as to the other, the fitness of each for any occupation being controlled only by their physical powers. This, I maintain, is not a sentimental view. It is, for aught I know, the view of many besides myself; though having never had time to read either book or pamphlet on the woman's-rights question, I may be advancing very old arguments: but this does not affect the rightness or wrongness of my own judgment, inasmuch as these conclusions have been arrived at independently, by practical

observation extending over many years, during which time I have been a daily educator of adult women, and thus know something of their wants and their powers. Experiments for educating women and men together are familiar to me; and so also is the strict separation of the sexes educationally. The former, in every case coming within my observation, has been beneficial to both; and the latter as detrimental. For this reason I would as strongly oppose colleges and universities for women only as for men only, each being but half the story; and the next great act of justice and wisdom which the just and wise should be called upon to perform, is opening all the universities and schools and colleges to women, in which they may acquire the educational basis of all the professions. The dangers which sage people with telescopic minds descry in the distance, when "sweet girl graduates" are placed in daily association with their graduating brethren, is a danger which is existing in their own households, at their neighbors' hearthstones, in their own churches, and in all social assemblies every day, without destroying them. If it be true that young men and women cannot meet on the same staircase, listen to the same lectures, and study the same subjects together, without disrespectful treatment of one another, and without influencing each other badly, it is something exactly contrary to my experience for twenty years; but, if it is really the case, the sooner they are taught to do so by actual experience, the better for every one concerned. It is a scandal and disgrace to the nineteenth century, if it be so.

I have dwelt more fully upon this topic than I should have felt warranted in doing, but for the fact that art study especially (in which knowledge of the human form is an essential to success in the highest branches) is one of the subjects which Mrs. Grundy has her opinions about, and darkly hints at the shocking things which sometimes happen, when women take to studying art, anatomy, and other fearful subjects, that ladies of delicate perceptions should never think about. That kind of grundyism must be wiped out; and I know no better way of doing it than by proving or making all such studies so pure and morally harmless that the purest-minded woman can study them without any shock to her most delicate perceptions, and with much profit to her knowl-

edge, and carry on her studies side by side with her masculine fellow-students. If there be any apples on the tree of knowledge which Eve must neither touch nor taste, I think, on the whole, Adam will be better without them ; and history, if it sets a precedent at all, records at least one instance where the same fruit was forbidden to both, — not to one only.

It is some comfort to know that many of the preserves of knowledge have been successfully besieged by women, and that colleges of surgeons and physicians, and academies of arts, whether royal or republican, are surrendering unconditionally to the demands of lady students for admission and degrees. In this crusade, men have taken the sorry part of obstructives, helped and encouraged thereto by the cackling of some women who profess in such matters to be anxious only for the happiness of their own sex, but who, if they had ever faced the difficulties of providing for themselves, might very quickly find good grounds for changing their opinions. Remembering, too, the indescribable amount of influence which women have upon their children, I cannot imagine it possible to over-educate them ; for every word and thought they utter is unconsciously shaping the minds and lives of their children, whilst yet of tender age ; and when we consider how almost invariable it has been, that the great men of all ages have owed their first inspirations and their habits of thought to their mothers, whose superiority to other women has been that of a higher education, it would appear to be established, that whatever it may be necessary to teach to men in this world, it is a matter of necessity to teach to women, in order that the man's education may begin with his life, and his mind be nurtured with his body, that perfect human education may be accomplished.

## TOPICS.

— WE sent Japan some time since three politicians to assist her in developing her resources, and to aid her in modelling her legislation after the most approved methods of Christian civilization. She has spewed them from her mouth. We don't blame her. She asked for a fish, and we gave a serpent; bread, and we gave a stone. The three men who were sent her at her request have proved themselves intellectually and morally incompetent. We are sorry for the result, not only because it is a disgrace to the American people, and has lowered us much in the regards of the Japanese Government, but because it has deprived our excellent and able friend, Prof. Northrop, of New Haven, who had been selected by the Japanese minister to look after the educational interests of that country, from doing a most valuable work in a field apparently white for the harvest. We have done an injury to a country thirsting for a better life, which ought not to let us sleep until we have in some way or other made her ample atonement.

— We print this month the questions given by the Boston school board, at the recent examination of candidates for masterships in the grammar schools of the Dorchester district. We print them, not because we consider them of any great account, but because of the curiosity which animates a good many members of the profession concerning the kind and amount of knowledge the Athens of America expects her teachers to be acquainted with. It may interest our readers, also, to know that the ability of the candidates to answer the questions had, as usual, very little influence in the elections subsequently held (if rumor is truthful). We have no hesitancy in saying that it ought not, under the circumstances. Such examinations will be of value when, as in the German schools, our teachers are required to teach but one science, and its kindred branches perhaps. It ought not to be expected that a teacher who spends all his nervous energy each day in the labors of the school-room will keep himself thoroughly conversant with all the technicalities of many branches of knowledge outside of his daily routine, especially when for more or less of them he has (and not to his discredit) no particular fondness. No teacher would, and if a true worker, could not. Experience aside, a chat of half an hour will enable one to form a more correct judgment of the fitness of a person to teach in one of our public schools than all the questions which have ever been framed for that purpose by learned school boards.

— We have received from Superintendent Leach, of Providence, the annual report of the school board of that city, together with his own very excellent report and questions given at the written examinations in the public schools. We are glad to know that the superintendent has been converted from the error of his — thought. In the July number of the "Teacher" he is reported as saying: "Spelling is a mechanical exercise, like singing. And we must, like singing, learn by repetition. I have taken a class and put them through the spelling-book before touching the reading-book. And children thus taught make the best readers." In the report before us he says: "Pupils, in their first efforts to learn to read, become so accustomed to associate words and sounds without ideas, that it is an exceedingly difficult task, and one that demands great skill in a teacher, so to change and modify early habits that words and expressions should always suggest vividly to the mind, thoughts and ideas." We thought when our friend in May made the statement reported, he must have been beside himself. But we are glad that he has got back to the singular number. We have no doubt that most of the poor reading in our schools is owing to the inability of the child to comprehend what he is reading. And we are equally decided in our opinion that the poor spelling so common in the writings of children has its origin in the senseless custom of requiring them to commit to memory words, the meaning of which they do not and cannot understand. It is about time that we give the English language its true position in our curricula of studies. Latin and Greek, French and German, are all deserving our respect, but we should love our own daughter best. What we want is a steady, persistent drill in oral and written expression of ideas, from the time the child enters school to the period when he is thrown into the whirlpool of active life. The profession should tingle with shame that so many children graduate from our common and high schools with an ability to write and talk but little superior to that of the denizens of the backwoods. A little less foppishness in the choice of studies, a great deal less feeding of young minds with rules and formulas which to them are simply so much nonsense, and more time devoted to cultivating eyes and ears, and pouring into these open doorways food palatable and fitting, — that will be the hour at the striking of which we shall clap our hands, and children will throw up their hats for joy.

## LETTER-BOX.

## FOREIGN LETTER.

HANOVER, Sept. 20, 1872.

*To the Editor of the "Teacher":—*

Some time has elapsed since my last letter, but I hope you will not think I have forgotten my friends across the water. I understand that the "Advertiser" has a correspondent here, who is very much pleased with the city. I am not at all surprised at this, for to a Bostonian, accustomed to the educated society of his own city, it must be very pleasant. Hanover is quite an old city, and as you know was formerly governed by an English house. Many of the old and quaint-looking buildings still remain, and afford a striking contrast to those of more recent construction. The house of Leibnitz, the great German philosopher, is still to be seen on the *Schmiedestrasse*, having been purchased by the late king of Hanover in order to preserve it against destruction. It is a very ancient-looking piece of architecture, with its projecting *etagen* and diminutive windows. The oldest building here, I have been told, stands on the corner of the *Breite* and *Osterstrasse*, opposite the *Aegidien* church. One would certainly think it was old, if it is judged from its appearance. The church is also rather quaint in appearance, and has a special attraction to me. The organist, a personal friend of mine, is a true specimen of a German schoolmaster; straight as an arrow, dignified, but one of the kindest of men; he is loved by all who have the pleasure of his acquaintance.

There is an old church here, called the *Markt Kirche* (market church), which attracts the attention of every stranger. During a greater part of the year its roof is covered with ravens. I admire the architecture of the interior; it is so massive and solemn in appearance that one cannot but feel that it is a place of worship. All the concerts given by a society here, similar to our Handel & Haydn Society, are given in this church. The stage is built in the auditorium, extending about half-way from the pulpit. I had the pleasure of hearing the oratorio of *Paradies und Peri* performed there, which was, I assure you, a great treat. The words are translated from Moore's writings, and the music is by Robert Schumann. It is very pretty, and I wonder that it has not been given in Boston. There is another church that I must not fail to mention: the *Schloss Kirche* (castle church). This church is built in the old castle, and of course belongs to the government. They have the finest choir there that I ever heard. It is composed of ladies and gentlemen who sing without accompaniment. I think the Americans can learn much from Germans in the art of brick-laying. They have a way of coloring their bricks, so that when used as trimmings in connection with the ordinary bricks they add very much to the beauty of the building. The bricks are made by machinery. The clay being free from stones, it has

simply to be passed through a set of cylindrical rolls which grind it fine enough for use. It then passes through an opening and comes out upon a table in the form of a sheet whose width is equal to the length and whose thickness is equal to the thickness of a brick ; the sheet being then cut into the required sizes. The bricks have two holes running longitudinally through the centre, which keep the walls drier, and which also assist greatly in the manufacture of the brick. There are very few houses here with slated roofs, the majority of them being covered with tiles. Shingles do not exist here. Throughout all my travels in Germany I do not remember having seen a wooden house, the houses being built of stone or brick. Many of the old houses, especially in the villages, are built just as we would build an ordinary wooden frame ; this frame is then filled in with brick, and the whole covered with plaster. The timbers of these buildings are plainly visible, and give to them a very picturesque appearance. Since the late king left Hanover, the city has improved very much, and new buildings are constantly being erected. I hope you will excuse my occupying so much space with a description of my new home, for, if I mistake not, you desired me to write you about the methods of education here.

There is a very fine polytechnic school here, and I have enjoyed myself very much while listening to the lectures of its savans. They are certainly very interesting and instructive. I have also had the extreme pleasure of being able to attend the recitations of the classes in the *Realschule*, which ranks in many respects with our high schools. The other day I read in the "Hannoversches Unterhaltungsblatt" a letter from a German in our country, on the system of education in America. He speaks very strongly against it, and I think with reason. He says we have no head, each State, and in fact each city and town, having its individual system. He says there are 5,660,074 people in our country who can neither read nor write, Massachusetts having 97,742 of these. The custom of obliging teachers to teach so many different branches is very severely criticised by him; he thinks that the instruction when thus carried on can only be superficial in its character. We claim in America that every one can obtain an education if he so desires, but I think that the different classes have a smaller chance for education than they have here. Our schools are partial in their arrangements. The wealthy have every opportunity to obtain for their children a good education, but this is not the case with the working classes. We all know that among the poorer classes are found the largest families. Suppose, as is often the case, a father cannot afford to keep his son in school after he is twelve years of age, he needing his earnings to provide for his large family. Now a child of this age, educated in our common schools, is not fit to launch out into the world ; he ought to remain in school. He should be provided with an education which better fits him for his position in life. He should first of all know how to read and write correctly, so that in after life he may be able to perform the duties of a good American citizen, and be able to continue his studies if he desires. I believe most firmly in a general education, but it requires time to obtain this.

It will do a boy but very little good to cram into his mind a little of a great many studies which perhaps he may never look at again. The different classes must have different training. Their studies must be regulated as far as possible by the time they are to remain in school, so that what they do learn, they learn with understanding. If they are going to be mechanics, they should study thoroughly the rudiments of mathematics. Algebra can be taught quite early if managed properly. Often men are called upon as members of our boards of government to vote upon sewers, streets, etc. How much do such men know about these things, not even being able to read the drawings, or to draw up a report on the same? Every man should prepare himself with the expectation that he will sometime in life be called upon to perform such duties. Our workmen should be better educated that they may become more skilful.

The majority of our machinists of to-day cannot read a drawing. A department for such should be inaugurated in our schools. Geometry, with its application to ordinary land-surveying, can be taught without difficulty. We are far behind Germany in this respect. They have three different classes of schools here: the *Gymnasium*, where students receive a classical education, and are prepared for the University; the *Realschule*, where they obtain a general scientific education; and the *Buergerschule*, where one is educated only in the common branches, French and English being also studied. In a republican country like ours, where all are supposed to have the same privileges, we do not give to our people the same chances in the way of education that the people receive here. I earnestly hope that the meeting of the teachers, which is soon to take place in Boston, may result in some good towards this end. Let us all work for it that we may satisfy the demands made by our working classes, with many of whom I have often conversed on this subject.

As to the method of imparting knowledge in the schools here, a few words will be sufficient to explain this. Most of the text-books are simply used for the purpose of reviewing what has already been explained to them by the teacher. Their arithmetic contains simply examples, without rules or solutions. The teacher explains every step on the blackboard, and after four or five scholars have done a similar example, and the teacher feels satisfied that the class understand it, they are required to perform the examples at home, to be brought in at the next recitation. The class-room is a conversation-room for teacher and scholars, and in the course of instruction the scholars are called upon to assist the teacher in his calculations, etc. They are not like our rooms, where some of the scholars are studying while others are reciting, but they are study and recitation rooms at the same time. The teacher goes from room to room, there being an intermission between each study. Everything is conducted on the lecture principle. Well, I see my letter has already reached a goodly length, so I will close, with my kind regards to all at home.

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## AS TWENTY-THREE IS TO FORTY.

*To the Editor of the "Teacher":—*

Our attention was arrested by these words in an article which appeared in the August number of the "Teacher," entitled, "Length of School Sessions," showing the proportion of time actually devoted to study and recitations in our elementary schools, as compared with the German schools.

By the following calculation, made in a medium grade of a Boston grammar-school class, it seems that as *eighteen* is to *forty* is the correct statement.

During the week, we have eighteen hours in the morning sessions, and eight hours in the afternoon sessions, giving but twenty-six hours the whole time with the pupils. From this we take thirty minutes for devotional exercises, and one hundred and twenty minutes for writing. Our regulations require eighty minutes for physical exercises, one hundred and twenty minutes for recess, sixty minutes music, and ninety minutes drawing. Total, five hundred (500) minutes, or eight and one third hours, leaving *seventeen and two thirds hours* for actual study and recitation.

How should this time be apportioned among the *common branches*?

If the various methods of teaching must determine the time, are music, drawing, etc., independent in this respect? We know some teachers can accomplish in five minutes what others never succeed in doing; how, then, can the regulations determine the time for any one? If it can be done for *one*, why not for all?

In seventeen and two thirds hours, instructors in my grade must "teach young ideas how to shoot," through spelling, grammar, geography, and arithmetic; morals and manners must be properly attended to; while composition, letter-writing, and dictation exercises must by no means be neglected, nor general conversations or object\* lessons, which are generally conceded to be excellent stimulants in digesting mental food.

In our schools the *teachers* do the work, that is, the wearing mental work, in devising ways for the accomplishment of their work in the allotted time.

Some of our pupils are "puny, lank, pallid, emaciated, round-shouldered, thin-breasted, etc.;" so are some of their parents, who never attended school a day in their lives. Exposure, scanty clothing, and improperly cooked food have been very generally the cause, rather than overwork in school; and in our opinion the best way to improve the physique of the pupils, is to superintend the general management of their homes. Many of our best families send the poorest children, physically considered, to our schools.

If we read the speller and spell the reader, ought we not allow thirty minutes to a lesson, and six lessons per week to each branch?

Is the same amount of time per week too much to be devoted to the study and recitation of grammar, and again to geography, including map-drawing? Granting this time, there remain five and two thirds hours to be devoted to

the science of numbers, etc. Will some one talk programme through the "Teacher" for our benefit?

In our class, time is allowed at school for the preparation of every task, but as the tasks are assigned one or more days in advance of the recitations, pupils can study at home if so inclined. Volunteers often do this, that the teacher may occupy the time for study in talking familiarly with them, or in reading. Sometimes stories are told which have been previously read at home or elsewhere, or a subject for discussion is suggested by the teacher or pupil. An opportunity is thus afforded for correcting false syntax, and for pupils to criticise each other's mode of expression, and they are assisted in the selection of proper books.

We would not have the time for these exercises crowded out of the programme, for much good may be done by occasionally meeting the class upon an equality, while in more formal exercises the opportunity is lost.

Once, when visiting schools, we entered a room in the midst of an object lesson on a bird, the point of the lesson being to name and locate the parts. One child gave, "The tail is at one end and the head at the other."

If our school-work has a caudal appendage, we would not give it pre-eminence in position on our programme.

"Where there is a will there is a way." Will some one who has a will give us her way of arranging the time-table for a grammar-school class, if in practice it works satisfactorily?

A TEACHER.

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*Editor of "Teacher": —*

I have a way of getting Nitrogen nearly pure, that differs from anything I have seen described, as follows: —

Collect over water two hundred cubic centimeters of NO. Admit to this five hundred cubic centimeters of air. The O<sub>2</sub> of the air will at once combine with the NO and form NO<sub>2</sub>. This NO<sub>2</sub> will be absorbed by the water and leave N nearly pure.

This process illustrates beautifully the absorption of a vapor by a liquid, the NO<sub>2</sub> forming in red fumes, and being at once absorbed by the water. I use the symbols employed in Eliot & Storer's manual of inorganic chemistry; for volumetric proportions I refer to the same book, pp. 203, 204.

A. C. PERKINS.

## NOTES.

— George Stephenson did not know the alphabet at eighteen.

— Poe's last words were, "My best friend would be the man who would blow out my brains."

— The Emperor William has recently bought a two-page letter of George Washington for two hundred dollars.

— The great German Heyne, of the last century, said that his first impressions in life came from the tears of his mother, who had not bread for her children.

— The first volume of "Bancroft's History of the United States" was published in 1834; the tenth, bringing it down to the adoption of the Constitution, will be soon issued.

— The title of Farjeon's Christmas story will be "Bread and Cheese and Kisses." It is the gala season, and he ought to make a great deal of his subject, especially the latter part.

— Mr. J. S. C. Abbott is at work on a new series of books entitled, "The Pioneers and Patriots of America." They will be published by Dodd & Mead of New York City, and generously illustrated.

— The master of the schools for little cripples at Munich, says that nothing tends so much to raise the boy's self-respect as physical education; the gymnastic ground, drill exercise, and plentiful bathing, have a wonderful effect.

— Hawthorne thus wrote about himself not a great ways this side his grave: I have been a happy man, and yet I do not remember any one moment of such happy conspiring circumstances that I could have rung a joy-bell at it.

— The Omaha Board of Education recently adopted the following books of

the popular "Eclectic Series" for the public schools of that city. "McGuffey's Readers" and "Speller," "The Eclectic Geographies," "White's Arithmetics," "Harvey's Grammars," and "Venable's U. S. History."

— A few months before the death of the elder Adams, Daniel Webster visited him, and to the inquiry, "How are you, Mr. Adams?" received the reply: "Feeble and worn out. The old tenement is in a state of dilapidation, and from what I can judge of the intentions of the landlord, he is not likely to lay anything more out in repairs."

— A writer in the "Old and New" says that sign language, instead of being an arbitrary, irrational, clumsy substitute for vocal communication, is a true language; and states in proof of the assertion, that the signs used by an Indian delegation last year in Washington, in connection with their broken speech, were similar to those in use in deaf-mute institutions.

— The "New York Medical Record" says that it is convinced that the hours in school should be decreased one third, a move which would be beneficial to both teacher and scholar. But why do the medical fraternity, if in earnest, leave the manipulation of school matters to men who know quite as much about children's bodies and brains, as to that matter, as a Hottentot of a bath-tub?

— Cooper tells us that he wrote his first story to show to his doubting friends that he could write a grave one; the second, to overcome the neglect of the literary world; and the third to please himself. But we wonder if he would have written the third to please himself, if the second, "The Spy," had not brought fortune as well as fame. The wherewith to get one's daily bread has a great deal to do

with that not very common principle,—independence.

— Heyne, in a review of Prof. March's "Comparative Grammar of the Anglo-Saxon," finds fault with us that "the paradigms are filled up to the full number of cases used in syntax, although the same form is found in two cases; that the three persons of the verb are given in the plural, though they are all alike; and that the classification of irregular nouns and verbs is that of the old grammars." The criticism is merited; but we presume that our schoolmasters will go on forcing children to commit the same senseless twaddle till—well, till they have educators and not pedlers to dictate to them.

— The "Pall Mall Gazette" says, that although music is supposed to be the peculiar sphere of woman, and that the proportion who study the branch compared with the number of males is as one to twenty probably, yet among pianists alone, for three ladies who have acquired celebrity,—Madams Pleyel, Schumann, and Goddard,—one could cite a dozen men; and that in the catalogue of great composers women have absolutely no place. What's the matter?

— George MacDonald says, in "The Vicar's Daughter," the common-minded masters in schools, who, unlike the ideal Arnold, are in the habit of disbelieving boys, have a large share in making the liars they often are. Certainly the vileness of a lie is not the same in one who knows whatever he says will be regarded with suspicion; and the master who does not know an honest boy after he has been some time in his class, gives good reason for doubting whether he be himself an honest man, and incapable of the lying he is ready to attribute to all alike."

— C. P. Cranch's translation of the "Æneid of Virgil" is nearly ready, and is to be issued in the same style as Longfellow's Dante, Bryant's Homer, and Taylor's Faust. Of course this large-

paper style is elegant, but it restricts the sale and the reading and enjoyment to a very small number of persons. There are thousands who would like to own and to peruse a good translation of Virgil, who are utterly unable, or at least disinclined, to pay, \$5.00 for the opportunity, when \$1.50 or \$2.00 would gratify their tastes and tax their pocket-books in a more satisfactory manner. And further, in these days of books, "large paper" copies come very near being cumbersome nuisances. The reader must sit up to a table and make a thorough business of what should be simply a pleasure. There is great force in the expression "a handy book"; and while the huge, sumptuous quarto may indicate the man of wealth, the smaller well-used "handy" will tell of the man of letters.

— M. Thiers seems to be a second Admirable Crichton. Besides governing France, he finds time for philosophy, botany, chemistry, and natural history. M. de Lavedau, the prefect of the Department of the Vierme, gives the following report of a recent conversation which he had with the president: "A few weeks ago M. Thiers did me the honor to inform me that he was occupied with a special work, independent of his other labors. 'I shall be glad,' he exclaimed, in a tone of noble indignation, 'to confound materialism, which is a folly as well as a peril. There is a fine book to be made on this subject, and I have as yet only written the half of it. Certainly I devote myself with my whole heart to the liberation of the territory, and the reorganization of the country; but at times I cannot help regretting my peaceable and cherished studies. For twelve years I have been engaged in this work. During all that time I have been exploring botany, chemistry, and natural history for arguments against the detestable doctrine which leads people astray. I am a spiritualist, an impassioned one; and I am anxious, I repeat, to confound materialism in the name of science and good sense.'"

## JNTELLIGENCE.

MR. J. W. CROSS, JR., formerly principal of the Lawrence Academy, Falmouth, and the High School, Yarmouth, having relinquished business at Keene, N. H., has taken charge of the Marlborough, Mass., High School. — S. C. Smith, late principal of Powers' Institute, Bernardston, has been chosen principal of the High School in Yarmouthport. — Mr. L. H. Marvel, principal of the High School, Yarmouthport, has been appointed superintendent of schools, in place of W. C. Spring, resigned. — The new town hall building at Middleborough will include a high-school room and also a lockup. — The fall term of the Wesleyan Academy at Wilbraham has opened with two hundred and seventy-five students. — Mr. F. M. Tyler, formerly of Yarmouthport, has been appointed principal of the Stetson High School, at Randolph, Mass. — Mr. D. D. Smith, of Dartmouth, a graduate of the Bridgewater Normal School, has taken charge of a grammar school in Sandwich.

MR. ELLIS PETERSON, assistant professor of philosophy at Harvard College, has accepted the post of principal of the High School in Worcester, and will enter at once upon its duties. From this time until December, at the suggestion of the school committee, he will visit various schools, in order that he may enter upon his work armed with the results of the latest and best experience. Mr. Peterson is himself one of the most competent and successful of teachers, and leaves his present position with the sincere regret of his associates and of the officers of the college. The high schools and academies of this State are attracting much of the best talent now devoted to teaching, which is good evidence of liberality on the part of those who manage them, and of the high estimation in which the work itself is regarded. — *Advertiser.*

THE new high-school building, Wake-

field, was dedicated a few weeks since, with addresses by Mr. Richard Britton, Mr. M. J. Hill, Prof. B. F. Tweed, Gen. Henry K. Oliver, and Rev. J. W. Chicker- ing. There was a dedication ode by Mrs. Georgie L. Heath, and prayer by Rev. C. L. McCurdy. The building faces the common, and is a substantial structure, costing about \$43,000. — The collegiate year at Mount Holyoke Seminary has opened with three hundred pupils, and more are expected to enter shortly. — A. L. Bart- lett, a recent graduate of Dartmouth, has been chosen principal of the High School, Sherburne, Mass. — Miss Sarah Hunk- ing, a graduate of the Female Seminary at Andover, has had charge of the extra class in the Haverhill High School, which could not be accommodated in the build- ing. She will be succeeded by Mr. Wil- liams, late principal of Auburn, Me., Grammar School, at a salary of \$1,000.

CAMBRIDGE. — The following teachers have been elected to the following posi- tions: Cora M. Wheeler, as assistant teacher in the Shepard Grammar School, at a salary of \$500; Miss J. A. Hod- gkins, as assistant in the Washington Grammar School, at a salary of \$700; Miss Olive Fairbanks, as teacher in the High School, at a salary of \$800. Emma E. Perkins will be transferred from the Gannett Primary School to the Allston Grammar School.

CHARLESTOWN. — Mabel Walsh ac- cepts a position as teacher in primary school number 14, and Matilda Gilman has resigned primary school number 31. Miss Alice Hatch substitutes for Miss Swords, who is out of school on account of ill health, and Carrie L. Arnold and Ida B. Bolan have been appointed teachers in Bunker Hill Primary School, and Georgia Fitzgerald, in Harvard Grammar School. The high school loses a faithful and efficient teacher in the death of Miss Dora Chamberlain.

**BOSTON.** — *Teacher Appointed.* Wells Grammar School, Mary G. Shaw.

**Salaries.** The Committee on Salaries reported relative to the order fixing salaries, recommending that the order pass fixing the salaries as last year, except in the cases of the principal of the Dudley School and the assistant of the Roxbury High School. After some discussion the report was accepted and the orders adopted. By this report the salaries of the assistants of the Roxbury High School are fixed at \$1,800, and that of the principal of the Dudley School (Miss Baker) is raised to \$2,000.

**Resignations.** Communications were received from N. E. Willis, resigning his position as teacher in the English High School; of Mary Lincoln and Harriet K. Dunham, primary teachers in the Dearborn District; of Josephine O. Paine, primary teacher in Charter-street school; of Emily Sersbuttel, in Hancock School; of Caroline B. Bigelow, assistant teacher in Prescott School. The resignations were severally accepted.

**Orders Passed.** That the salaries of master's head assistants in the Normal School be fifteen hundred dollars per year; other assistants, one thousand dollars per year; that the salaries of the principals of Evening Drawing Schools be ten dollars per night, and the assistants five dollars per night when actually employed by the committee; that the salary of the teacher of French in the Dorchester High School be seven hundred dollars, and of the teacher in German six hundred dollars for the school year commencing Sept. 1, 1872; that on and after the next promotion of the classes in the Primary Schools in February, the pupils in those schools shall be taught reading by the use of the edition of Hillard's Primary Reader printed in Leigh's pronouncing type; authorizing the Committee on Accounts to approve bills for the entertainment of the National Educational Association not exceeding \$1,000; that the study of Latin be introduced into the fourth year of the course for the English

High School, as an elective study; instructing the Committee on School-houses to report upon the expediency of establishing a Primary School in the vicinity of Beacon, Gloucester, and Marlborough Streets.

**DORCHESTER SCHOOLS.** — J. T. Ward, Jr., has been elected principal of the Minot School; E. M. Lancaster, of the Stoughton School; and D. B. Hubbard, of the Mather School.

**PEABODY.** — A new Primary School has Miss Ella N. Manning, a graduate of Salem Normal School, as teacher. Miss H. Chase is transferred from Bowditch to the Wallis School to fill the place of Mrs. Whitney, resigned. Miss Ellen M. Bradley, master's assistant in Centre School, resigns to accept a situation in Haverhill, — Miss Putnam of Boston succeeds her. Miss Ellen Teele, of Peabody, a recent graduate of the Salem Normal, is appointed to the new Primary in the Bowditch School. — A new school in Feltonville has Miss Eliza H. Poor, a graduate of the Peabody High School, as teacher. — Miss Gould, a teacher of long and successful experience, has resigned on account of ill health. — The School Committee have recently required of the teachers a record of cases of corporal punishment. They have also forbidden the detention of children after school more than half an hour. — Sessions of the Grammar School have been shortened a half hour daily; also in the High School, Saturday sessions have been omitted, — both voted by Committee in accordance with the terms of petitions presented from parents and teachers. — Miss L. E. Kimball resigns her position as head assistant in the Centre Grammar School to accept a like place in Hyde Park. — Miss Rogers is transferred from Rockville to fill her place. — The School Committee of Peabody loses one of its most valuable members in the departure of Rev. A. B. Herney to Troy, N. Y.

Miss S. R. GIFFORD resigned her posi-

tion in New Bedford a few months since, to accept an offer from Cleveland, O.—

Mr. J. B. Poole takes charge of the High School in Stoughton, resigning a like position in Walpole. — Miss L. Ellen Groce, of East Abington, is transferred from the Centre Grammar School to the South.

— Miss H. B. Loud resigns her school in East Abington in which she has been long a successful teacher, to accept an engagement as speaker in the cause of Woman Suffrage.

THE following questions were given at an examination of candidates for masterships, August 24, 1872, in the Dorchester district, Boston.

ARITHMETIC.—1. Add together ten thousand and seven ten-thousandths, and one thousand and four hundred sixty-five hundred thousandths; subtract from the sum eight hundred seventy-six and thirty-nine hundredths; multiply the remainder by five-tenths, and divide this product by eleven thousandths.

$$2. \text{ What is the value of } \frac{8}{9} + \frac{81}{92} \text{ of } \frac{3}{5} \div \frac{2}{5} + \frac{3}{4} \text{ of } \frac{21}{35} + \frac{47}{910}?$$

3. If it take 36 pounds of cotton to make three pieces of sheeting, each containing 31 yds., one and a quarter yds. wide, how many pounds will be required to make 7 pieces of sheeting, each 27 yds. long and one and  $\frac{1}{2}$  yds. wide?

To be performed and explained both by analysis and proportion.

4. Mr. A gave a note Jan. 1st, 1869, for \$965, interest at 7 per cent, and paid on it as follows: Sept. 1st, 1869, \$48; Feb. 1st, 1870, \$138; July 1st, 1870, \$315; March 1st, 1871, \$750. On the 1st of Dec. 1871, he paid the balance. How much did he pay?

5. How to find the rate when the principal, interest, and time are given, or either one of these when the others are given.

6. I owed \$900 due in four months, but my creditor offered to deduct 4 per cent of the debt for ready money, and I

paid \$696 down. How much did I still owe?

7. I have sent \$5,000 worth of goods to a merchant to be sold at a commission of three per cent; the proceeds he is to invest in other goods after deducting a commission of two and a half per cent for making the purchase. What was the cost of these goods?

8. What is the length of one side of a square piece of land, whose area is equal to a rectangular piece 213 $\frac{3}{4}$  rods long by 79 $\frac{7}{10}$  rods wide?

9. A rectangular field is 100 rods long and 80 rods wide, its sides running north and south. A starts from the southeast corner and travels north 60 rods, then in a straight line to the northwest corner. How much farther did he travel than he would have if he had gone in a direct line all the way?

10. What is the length of one side of a cubical vat, whose cubical contents are equal to one 19 $\frac{1}{2}$  feet long, 17 $\frac{1}{2}$  feet wide, and 12 $\frac{1}{6}$  feet deep?

GRAMMAR.—1. Define etymological and syntactical parsing.

2. Write all the participles of the following verbs: *begin, lie* (to recline), *set, light*.

3. What property do you consider absolutely necessary to constitute perfection in language? State your reasons.

4. Define what we call "case." Is it necessary in all languages? Explain your answer by an example.

5. Give an example of personification, — of metaphor, — of simile.

6. In the sentence "He that glorieth, let him glory in the Lord," parse the words *He, let, and glory*.

7. Analyze the following sentence and parse the words in italics: And *over* them triumph and death his dart shook, but delayed to *strike* though oft invoked with vows, as their chief *good* and final hope. *Sight* so *deform* what heart of rock could long *dry-eyed* behold?

8. Correct the following sentences: She took it more to heart than I thought for. It is not him who you thought it

was. Every one of those pleasures that are pursued to excess, convert themselves into a poison.

9. Make any suggestions concerning the following sentence : "I will drown, and nobody shall help me."

10. Parse the words in the following sentence : "Me what is substance teach, and shadow what."

**GEOGRAPHY.**—1. Locate the Tropics and Polar Circles, and give the reason for this location.

2. In what longitude is the dividing line between the Eastern and Western Hemisphere, and why was this line adopted?

3. What is the difference between the polar and the equatorial diameter of the earth ; explain the cause of this difference.

4. Explain the phenomena of tides, including spring tides, neap tides, and the high and low tides on opposite sides of the earth.

5. Describe the mountain systems of Europe and Asia.

6. Name the capitals of Italy, Belgium, Norway, Japan, Persia, Nebraska, Texas, Georgia, Ecuador, Venezuela.

7. Name the five largest lakes of Europe.

8. If a steamship sail from San Francisco to a port in the same latitude in Japan, on what kind of a circle must she sail in order to go by the shortest way?

9. Name the five longest rivers of Europe.

10. What countries are included in whole or in part in the basin of the Amazon river ?

**NATURAL PHILOSOPHY.**—1. Define the three states in which matter may exist, and explain the attractive and repulsive force in each condition.

2. What is adhesion and what is cohesion ?

3. What is specific gravity ?

4. What is the law of falling bodies ? How far would a body fall in five seconds ?

5. Explain the spectroscope.

6. What are the principal sources of heat ?

7. How would you ventilate your school-room ?

8. Mention some of the properties of steam.

9. Explain the difference between the high-pressure and the low-pressure steam-engine.

10. Explain the operation of the electric telegraph ?

**HISTORY.**—1. Give a brief account of the discovery of America.

2. Where were some of the earlier settlements in North America made ?

3. Where was the first permanent settlement in New England made, and what was the essential character of the enterprise ?

4. What were the causes of the American revolution, and what were some of the principal battles of the war ?

5. What changes in our form of government were effected by the formation of the constitution ?

6. Name some of the standard writers on American History.

7. Who was William the Conqueror, and on what grounds did he claim the English crown ?

8. Name the sovereigns of the house of Tudor, and state to what they owed their great power.

9. What was the great question at issue between Charles 1st of England and his people, and what led to his execution ?

10. Name some of the standard writers on English History.

**GENERAL QUESTIONS.**—1. If called upon to classify and organize a school of, say, two hundred scholars, of ages between five and fifteen, state fully the theory upon which you would make the classification, and the method by which you would accomplish it.

2. Describe fully how you would examine a school (teachers and scholars) to ascertain its merits or its deficiencies.

3. What is the proper use of a text

book in teaching? Give an illustration of the proper use, and of the contrary.

4. Give an outline of an exercise in "Oral Instruction," using the word "whittle" as the theme, the object of the exercise being to give to the class a general idea of Philology, and its relation to history.

5. What is the diaphragm? and give the origin of the word, and explain the reason of its original use.

6. Explain the theory of artesian wells.

7. What was the first book printed in the English language; when, where, and by whom was it printed; and by whom was the art of printing introduced into England?

8. Define and illustrate the word syllogism, of what school of philosophy was it characteristic, and what and whose method of reasoning supplanted the syllogistic?

9. Explain the origin of the terms four-penny, ten-penny, etc., used as descriptive of the different sizes and weights of nails.

10. Define the words Charter-party, Bill of Lading, Receipt, Account Current, Account Sales, Invoice, Bill.

#### COLLEGE GOSSIP.

**HARVARD COLLEGE.** — The first Monday of the college year is known as "Bloody Monday." It is so called from the fact that the Sophomore and Freshman classes on the evening of that day have usually had scuffles or "rushes," to use the college phraseology, in which noses are apt to get bumped, and the blood will come. These rushes were completely stopped on Monday night. The proctors assembled in force, and whenever a crowd gathered they would dash into it, each proctor securing a man, and taking his name. Again and again the classes endeavored to form, but each time their efforts were defeated. They went to Jarvis Field in the hope that the proctors would not follow them there, but hardly were the classes massed than the cry of "proctors" was raised, and the fellows scattered in every direction. About a dozen of the twenty whose

names were taken on Monday night have since been suspended for a year. This is a very severe punishment, much more severe than that exacted for similar offenses in previous years, and shows the determination of the Faculty to put down hazing.

The new halls, Matthews and Weld, are open, and nearly all the rooms have been taken. The buildings are divided into suites instead of single rooms, as in the old halls. In Weld Hall a suite consists of a parlor, bedroom, bath-room, and closets; in Matthews, of a parlor, two bedrooms and closets, the bath-rooms being down-stairs. Bath-rooms are a new feature in Harvard College. Both the buildings are finished throughout very handsomely in hard-wood. The rooms have double doors, the outer of which, as in Oxford and Cambridge, will be called the "oak." When a man wants to be quiet, and not to be troubled by callers, he shuts and locks this outer door, "sports his oak," and his fellow-students understand by the fact of this outer door being locked that he wishes to be alone. Rents in these buildings are according to location, from \$175 to \$300 per annum. In Holis and Stoughton they are from \$40 to \$75.

The Memorial Hall is progressing rapidly. The Chapel will not be completed for a couple of months, and until it is completed there will be no prayers.

The new Freshman class numbers about two hundred. In the Sophomore class there is a son of Mrs. H. B. Stowe and also a son of General Butler; while in the Junior class, President Grant has a son; and in the Freshman, the poet Longfellow a nephew, and Speaker Blaine, a son. — *Congregationalist.*

**GENERAL F. A. WALKER**, of North Brookfield, commissioner of Indian affairs, and late superintendent of the census, accepts his appointment to the professorship of history and physical geography in the Scientific School at Yale College, as the successor of Professor Gilman, and will assume the duties

of the place in a few months. It is considered a fortunate appointment for the college.

Two ex-presidents of western colleges are reported in the new class at the Yale divinity school.

In the preliminary Yale catalogue, the names of eight hundred and thirty-eight students are given, and the medical school is not included. The last year's catalogue showed eight hundred and twelve names. The academic department has fallen off forty-three names, but this deficiency is likely to be removed when the freshmen on probation are safely in. In the list of the faculty the names of Professor Gilman, and Tutors Day, Beckwith, and Perrin have disappeared since last year, and the names of Professors Carter, Sumner, and A. S. Wheeler, and Tutor Coy, appear for the first time. Adolph von Steinwehr, Richard M. Bache, F. R. Honey, Edward S. Breidenbaugh, Horace Andrews, Daniel H. Pierpont, and T. M. Prudden have been added to the number of instructors in the scientific school, and Messrs. Merriman, Mixter, and Davenport are gone.

TWENTY-SEVEN of the class of 1871 at Yale College have taken post-graduate courses in the different departments of the university since their graduation.

**PHILLIPS EXETER ACADEMY.** — Of the numerous academies which have made for themselves a name and a power in New England and throughout the country, none has done more for the cause of sound and liberal learning than that located at Exeter, N. H., and called the "Phillips Exeter Academy," to distinguish it from another Phillips Academy in Andover, Mass., both founded by one family.

Chartered in 1781, it was opened for pupils in 1783. Its founder was John Phillips, LL. D., a graduate of Harvard in the year 1735. \$60,000 was the total amount of his gifts at various times, a sum which was indeed princely in those days, and which, by a preservation of a part of the income, has so increased

that the fund now available is \$125,000. The only addition from other sources has been \$35,000, which was given for specific purposes.

The first principal of the Academy, Dr. Benjamin Abbott, was graduated at Harvard in 1788, at the age of twenty-six, and occupied the position of principal for fifty years. His retirement in 1838 was made the occasion of a grand gathering of the scattered alumni, and a dinner, at which Daniel Webster presided, and speeches were made by Edward Everett, and his brother Alexander, Leverett Saltonstall, John P. Hale, and other distinguished sons of "old Phillips."

Dr. Abbott was succeeded by Gideon L. Soule, LL. D., who entered the Academy fifty-nine years ago, as a pupil, and began his career as an instructor just fifty years ago.

The old wooden building, erected in 1794, in which so many eminent men made their preparation for college,—among them Webster, Cass, Everett, Bancroft, Sparks, Hildreth, Gen. Dix, Gen. Butler, John P. Hale, and President Chadbourne,—was destroyed by fire in December, 1870.

As the gift of the alumni, who contributed upwards of \$45,000 for the purpose, an elegant and convenient brick building has been erected, which covers an area of seventy-two by sixty-five feet, and has on either side projecting wings extending backward beyond the main building, each thirty-eight by seventy-two feet. The extreme height of the tower is one hundred feet. It contains a clock, the gift of an alumnus, and a bell, the gift of the class of 1870.

The lower floor is devoted to recitation-rooms, and the second story has recitation-rooms, society-rooms, and a fine hall, sixty-nine by forty-three feet. This hall is to be hung with a large number of portraits of distinguished officers and friends of the institution.

**COLLEGE NEWS.** — The late James Arnold of New Bedford bequeathed \$100,000 to Harvard University for the

establishment of an arboretum. It has been decided to locate this arboretum on the Bussey farm in West Roxbury, where the School of Agriculture is already under way. The details of the work are to be under the immediate control of Prof. Sargent, who is eminently well qualified for it. — The Amherst College cabinets are in their highest trim. The costly ruby, weighing 312 pounds, which was recently brought from North Carolina, is now on exhibition. — The freshman class of Dartmouth College numbers upwards of one hundred students. The Delta Phi Fraternity have erected a fine edifice at a cost of \$4,000, making the second society hall owned by members of the college. — The trustees of Trinity College have the refusal until November 1 of about 103 acres situated between Asylum and Farmington Avenues, west of the river in Hartford, and should it be purchased as a site for the college buildings it will virtually add a magnificent park to the city, and be accessible by two lines of horse railroad. — Bowdoin College was not represented in the State regatta at Portland, by a decree of the faculty, as a considerable portion of the spare time of the students is occupied in military drill in preparation for the review to be held at the Sagadahoc fair. — Some of the young ladies of the high school attend Professor Snell's lectures in natural philosophy at Amherst on Wednesday and Saturday mornings. If young ladies are admitted to this privilege, why not to more and to all the college can afford? — *Amherst Record.* — Professor James K. Hosmer, formerly Unitarian minister at Deerfield, has resigned his professorship in Antioch (O.) College, and accepted a similar position in Washington College at St. Louis, Mo. — Charles E. Greene, city engineer of Bangor, has been appointed professor of civil engineering in the university of Michigan. — The

freshman class of Middlebury College number twenty-one. — The college library at Williams College has just been enriched by the addition of the celebrated edition of Cuvier's work on the animal kingdom, published by his disciples after his death, which is imported from Paris at a cost of \$300. — Professor Charles Fish, of the Hallowell classical school, writes that the fund of fifty thousand dollars to endow that institution has all been received, and the work of erecting the buildings will proceed without delay. There are already sixty pupils in the new school. — Most of the money necessary to erect the new library building at Dartmouth College has been secured.

DR. J. G. HOLLAND has been appointed commissioner of public instruction in New York, by Mayor Hall, in the place of Enoch L. Fancher, who was recently appointed to be a justice of the supreme court by Governor Hoffman. Dr. Holland took his seat at the board for the first time Wednesday afternoon.

ONE hundred and twenty-three families have offered to take two each of the Chinese boys sent to this country for education by the Chinese government. As but thirty of the one hundred and twenty to come have yet arrived, they are amply provided for. The commissioners in whose charge they are will probably reside at Hartford or Springfield, and for that reason the boys will be placed in families easily accessible from those places. They are to remain in the country fifteen years, by which time they will know enough of our civilization to expound it to their own countrymen. Their continuance in the localities where they are now placed will depend upon the progress made. Though in private families, they are expected to have regular hours for study and recitation, and to be under strict control. — *Congregationalist.*

## Books.

THE PENNSYLVANIA PILGRIM. By John G. Whittier. Boston: James R. Osgood & Co.

Since 1860 we have had the ripe fruit of the genius of Whittier. His Home Ballads were the beginning of a new era in his writings. There is a finish in the structure of the verse, and a depth and beauty of sentiment in his later writings, something of which we miss in all that preceded that time.

When the dreamer, —

“With a mission to fulfil,  
Left the muses’ haunts to turn  
The crank of an opinion mill,” —

it could hardly fail to interfere somewhat with the rhythmic numbers of his verse. But now, the mission fulfilled, the stream flows in smoother numbers.

Since then he has given us “Snow Bound,” “The Tent on the Beach,” and now “The Pennsylvania Pilgrim.” If this “simple picture, sketched in sober colors, toned down to the quick and dreamy atmosphere through which its subject is visible,” does not find the universal favor of “Snow Bound,” it will be because it does not appeal so directly to the experience of most readers.

We cannot doubt that to the more thoughtful it will be of equal interest, and more profoundly suggestive. It is a pious tribute to the Quaker Pilgrims of Pennsylvania by a most worthy descendant; an attempt to do something like the same justice to “the irresistible might of meekness” as manifested by them, that has been done “to the faith, courage, and self-sacrifice of the Pilgrims of Plymouth.”

The picture with which the poem begins, of Anna’s reception of Pastorius on his return from the monthly meeting at Philadelphia, disheartened by the

“Ripple of dissent which downward ran,  
In widening circles as from man to man,”

when his memorial against negro slavery was read, is simply exquisite. Her gentle but inspiring faith reassured him. When, “touching with her finger-tip an aloe,” she said, —

“See this strange plant its steady purpose hold,  
And, year by year, its patient leaves unfold,  
Till the young eyes that watched it first, are old.

“But sometime, thou hast told me, there shall come  
A sudden beauty, brightness, and perfume,  
The century-moulded bud shall burst in bloom,”

it is no wonder that

“Tenderer  
Than youth’s caress upon the head of her  
Pastorius laid his hand.”

The “simple picture of this noteworthy man and his locality,” the tolerant, Christian spirit which pervades it, so that even theological discussion “ended in Christian love,” will ever remain to the mind’s eye a “visible memento” more significant and enduring than any tombstone or monument raised by human hands. Justice is at last done to the Quaker Pilgrims of Pennsylvania, bearing their testimony for truth and holiness, peace and freedom, enforced by the “unresistible might of meekness.”

Our book-table is well covered with new publications; but we are obliged to postpone extended notices until the next number.

From Scribner, Armstrong & Co. we have received the “Marble Prophecy” and other poems, by Dr. J. G. Holland; three books for young readers, just the things for Christmas gifts; two volumes from the “Library of Travel, Exploration and Adventure,” and one in the “Library of Wonders.” They are richly deserving of the good word we shall say for them next month.

From Harper & Bros. we have received “Thirty Years in the Harem,” “California,” a very valuable book for travellers: “The Adventures of a Brownie,” by the author of “John Halifax, Gentleman,” and “The Eustace Diamonds,” a select novel. These works are for sale by A. Williams & Co.

We have received from the firm of Thompson, Bigelow & Brown, “Bradbury’s Elementary Geometry and Trigonometry,” one of the Eaton series of mathematics.

“Art Education,” by Walter Smith, James R. Osgood & Co. have laid upon our table; but we are obliged to forego a review until next month.